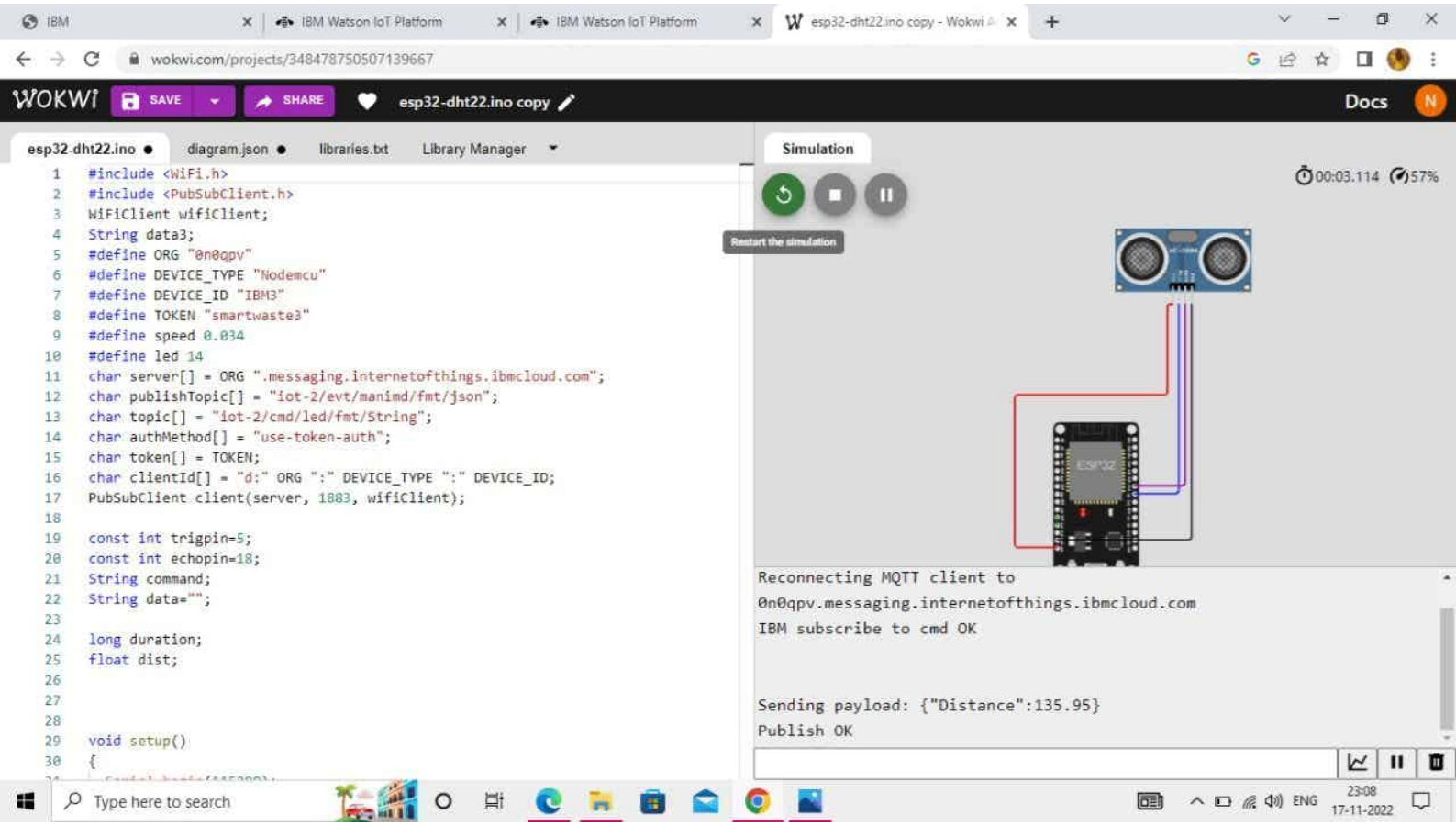
ASSIGNMENT -- 4

WOKWI PROGRAM

Team ID : PNT2022TMID47019



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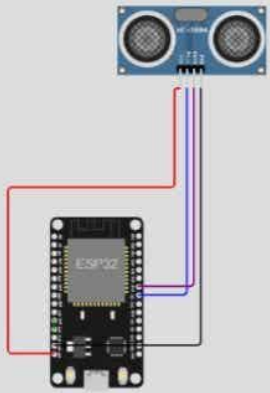
```
  Serial.begin(115200);
  pinMode(led, OUTPUT);
  pinMode(trigpin, OUTPUT);
  pinMode(echopin, INPUT);
  wifiConnect();
  mqttConnect();
}

void loop() {
  bool isNearby = dist < 100;
  digitalWrite(led, isNearby);

  publishData();
  delay(500);

  if (!client.loop()) {
    mqttConnect();
  }
}

void wifiConnect() {
  Serial.print("Connecting to "); Serial.print("Wifi");
  WiFi.begin("Wokwi-GUEST", "", 6);
  while (WiFi.status() != WL_CONNECTED) {
    delay(500);
    Serial.print(".");
  }
  Serial.print("WiFi connected, IP address: "); Serial.println(WiFi.localIP());
}
```

Simulation



```
Sending payload: {"Distance":136.02}
Publish OK
```

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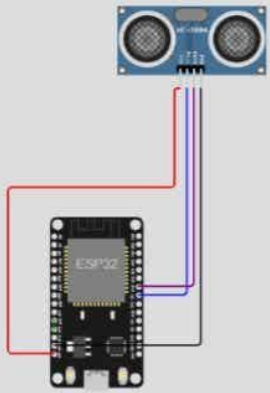
```
void mqttConnect() {
  if (!client.connected()) {
    Serial.print("Reconnecting MQTT client to "); Serial.println(server);
    while (!client.connect(clientId, authMethod, token)) {
      Serial.print(".");
      delay(500);
    }
    initManagedDevice();
    Serial.println();
  }
}

void initManagedDevice() {
  if (client.subscribe(topic)) {
    // Serial.println(client.subscribe(topic));
    Serial.println("IBM subscribe to cmd OK");
  } else {
    Serial.println("subscribe to cmd FAILED");
  }
}
void publishData()
{
  digitalWrite(trigpin,LOW);
  digitalWrite(trigpin,HIGH);
  delayMicroseconds(10);
  digitalWrite(trigpin,LOW);
  duration=pulseIn(echopin,HIGH);
  dist=duration*speed/2;
  if(dist<100){
    String payload = "{\"Alert Distance\":";
```

Simulation



```
Sending payload: {"Distance":136.02}
Publish OK
```

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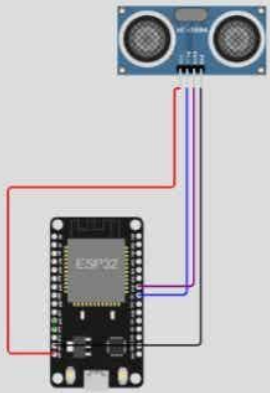
```
    payload += dist;
    payload += "}";

    Serial.print("\n");
    Serial.print("Sending payload: ");
    Serial.println(payload);
    if (client.publish(publishTopic, (char*) payload.c_str())) {
      Serial.println("Publish OK");
    }

  }
    if(dist>100){
    String payload = "{\"Distance\":";
    payload += dist;
    payload += "}";

    Serial.print("\n");
    Serial.print("Sending payload: ");
    Serial.println(payload);
     if(client.publish(publishTopic, (char*) payload.c_str())) {
      Serial.println("Publish OK");
    }else {
      Serial.println("Publish FAILED");
    }

  }


}
```

Simulation



```
Sending payload: {"Distance":136.02}
Publish OK
```

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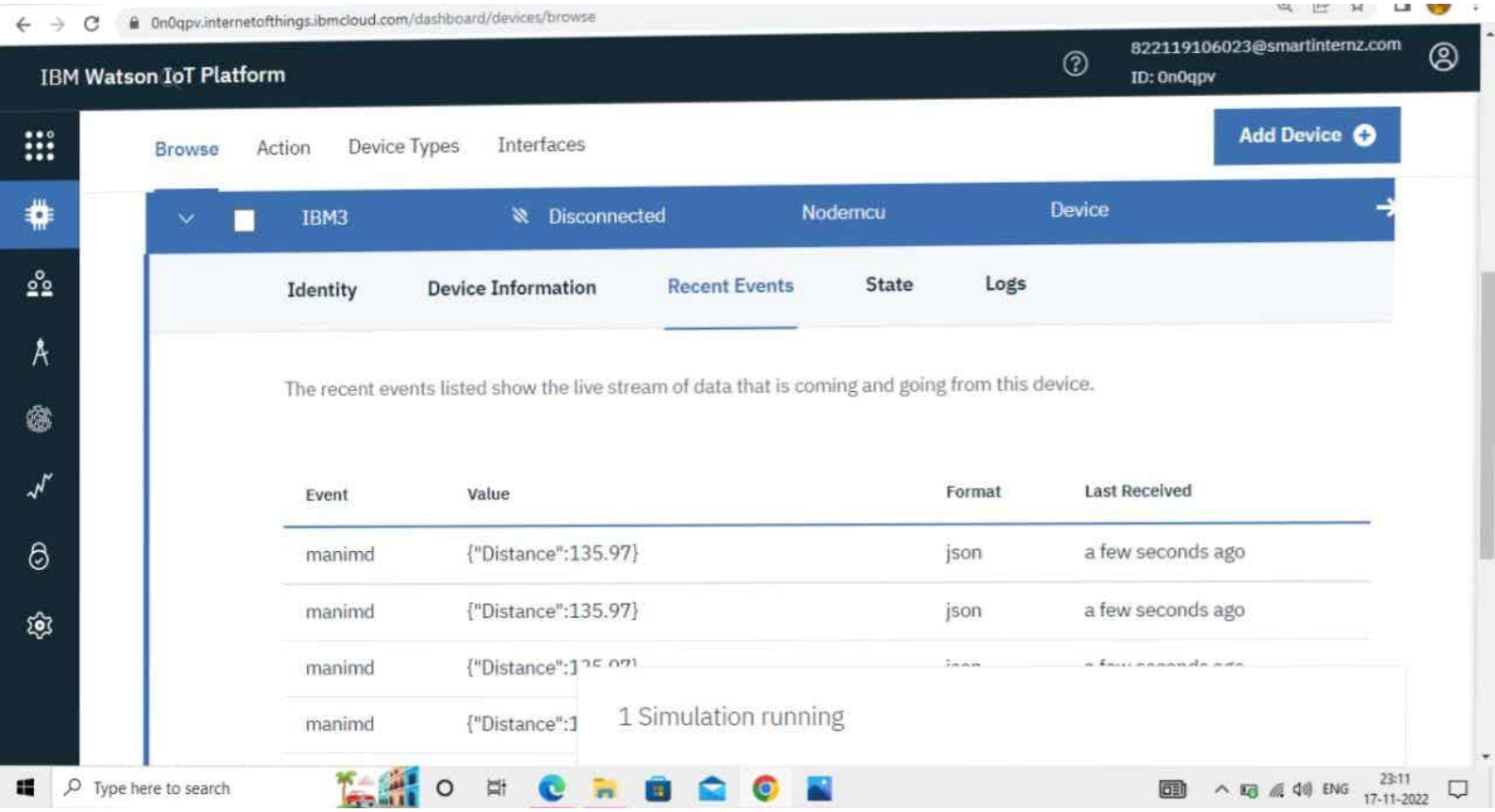
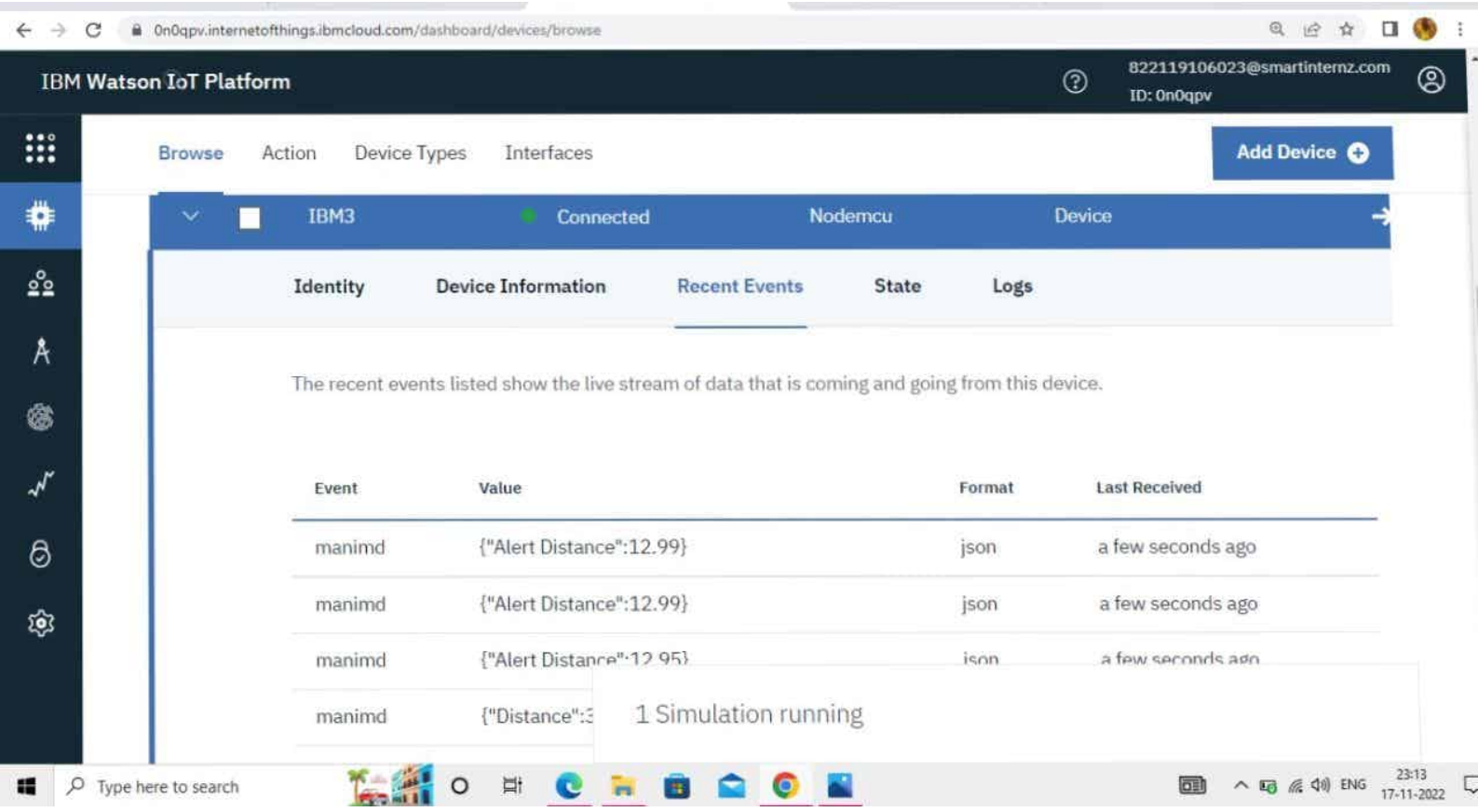
OUTPUT : This device was connected to IOT WATSON successfully .




0n0qpv.internetofthings.ibmcloud.com/dashboard/devices/browse
IBM Watson IoT Platform
822119106023@smartinternz.com
ID: 0n0qpv
Browse
Action
Device Types
Interfaces
Add Device
IBM3
Connected
Nodemcu
Device
Identity
Device Information
Recent Events
State
Logs
The recent events listed show the live stream of data that is coming and going from this device.
Event
Value
Format
Last Received
manimd
{"Alert Distance":12.99}
json
a few seconds ago
manimd
{"Alert Distance":12.99}
json
a few seconds ago
manimd
{"Alert Distance":12.95}
json
a few seconds ago
manimd
{"Distance":3
1 Simulation running
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ENG
23:13
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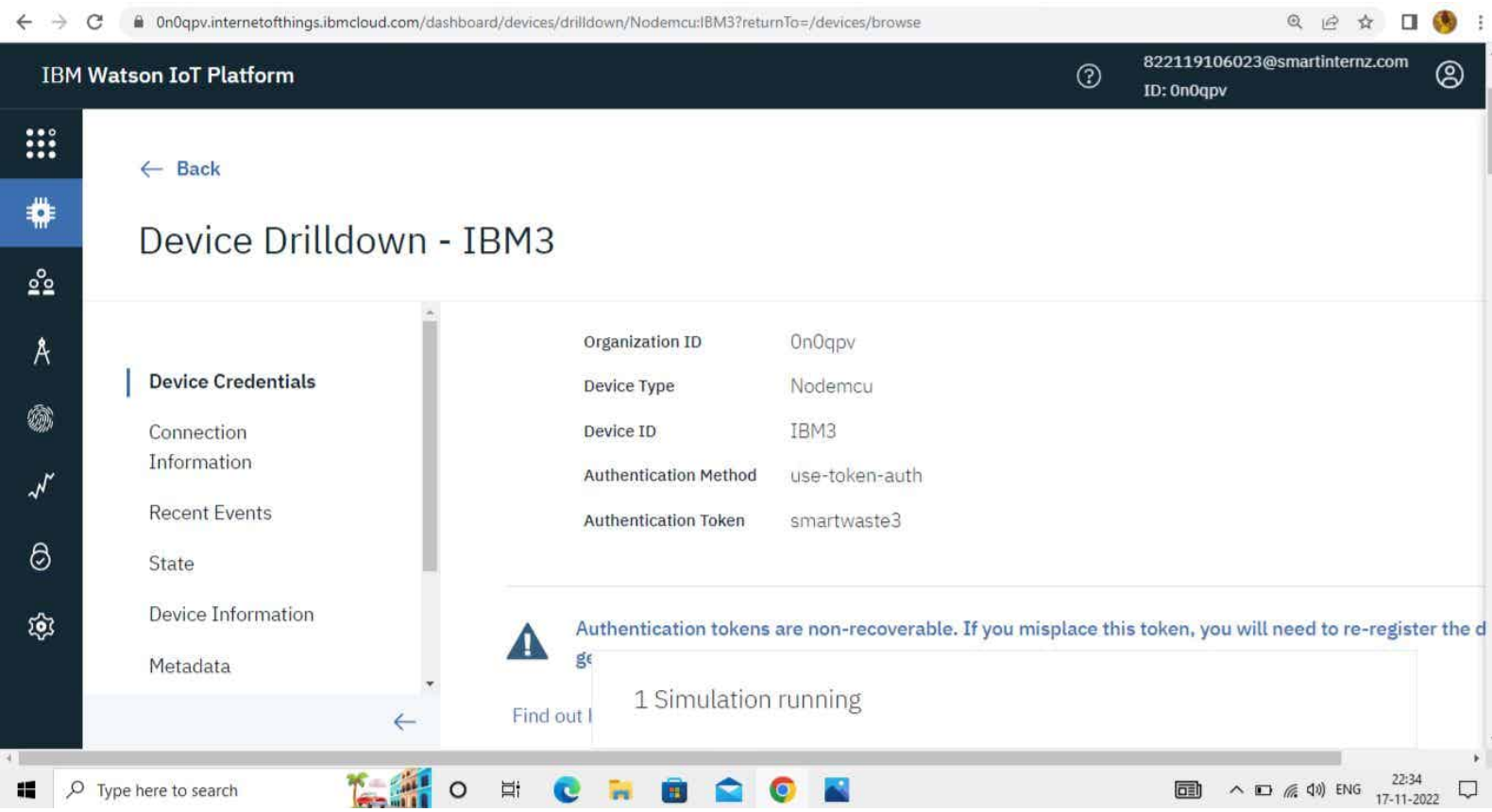
0n0qpv.internetofthings.ibmcloud.com/dashboard/devices/drilldown/Nodemcu:IBM3?returnTo=/devices/browse
IBM Watson IoT Platform
822119106023@smartinternz.com
ID: 0n0qpv
Back
Device Drilldown - IBM3
Device Credentials
Connection Information
Recent Events
State
Device Information
Metadata
Organization ID 0n0qpv
Device Type Nodemcu
Device ID IBM3
Authentication Method use-token-auth
Authentication Token smartwaste3
Authentication tokens are non-recoverable. If you misplace this token, you will need to re-register the d
Find out
1 Simulation running
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